

## Transient no light perception visual acuity after cataract surgery

### Perda visual temporária de percepção luminosa após cirurgia de catarata

### *Pérdida de visión temporal de percepción luminosa tras cirugía de catarata*

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#### ABSTRACT

A 40y-old white woman, with controlled type 1 diabetes, presented with transient “no light perception vision” in her right eye immediately following uncomplicated cataract surgery. She had vitrectomy for diabetic retinal detachment years ago. The use of intracameral unpreserved lidocaine in a vitrectomized eye may have facilitated the posterior diffusion of the drug in this case. Patient full recovery of vision suggests the relative lack of retinal toxicity of lidocaine in small intracameral concentrations.

#### RESUMO

Mulher branca de 40 anos, com diabetes tipo 1 controlado, apresentou perda visual de percepção luminosa no olho direito, imediatamente após cirurgia de catarata sem complicações. A paciente havia se submetido a uma vitrectomia 10 anos antes, devido a um descolamento de retina causado pelo diabetes. O uso de lidocaína intracamerar sem conservantes em um olho vitrectomizado pode ter facilitado a difusão posterior do medicamento neste caso. A completa recuperação da visão da paciente sugere uma relativa ausência de toxicidade retiniana da lidocaína em pequenas concentrações intracamerarais.

#### RESUMEN

Mujer blanca a los 40 años, con diabetes tipo 1 controlada, presentó pérdida de visión de percepción luminosa en el ojo derecho, inmediatamente luego de una cirugía de catarata, la que no presentó complicaciones. Se había sometido la paciente a una vitrectomía diez años antes, debido a un desprendimiento de retina provocado por la diabetes. El uso de lidocaína intracamerar sin conservantes en un ojo con vitrectomía puede haber facilitado la difusión posterior de la medicina en este caso. La completa recuperación de la visión de la paciente sugiere una relativa ausencia de toxicidad de lidocaína en pequeñas concentraciones intracamerarales.

#### Keywords:

Cataract;  
Visual Perception;  
Diabetes Mellitus Type 1;  
Vitrectomy

#### Palavras-Chave:

Catarata;  
Percepção visual;  
Diabetes Mellitus Type 1;  
Vitrectomia

#### Palabras Clave:

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## INTRODUCTION

Intracameral lidocaine is often used to augment topical anesthesia during ocular surgery. Although intracameral lidocaine is believed to be safe for the cornea and anterior chamber<sup>1</sup>, concerns persist regarding the possible toxic effects of lidocaine in retina. We describe a case of a rare complication with intracameral lidocaine.

### Case Report

A 40 year-old white woman, with controlled type 1 diabetes, presented with “no light perception vision” in her right eye immediately following uncomplicated cataract surgery. Her past ocular history was remarkable for pars plana vitrectomy for proliferative diabetic retinopathy in this eye 10 years previously. Her best corrected visual acuity prior to cataract surgery was 20/70 due to advanced nuclear sclerosis. Posterior segment evaluation showed a controlled panphotocoagulated retina and a normal macular OCT [Figure 1](#). The cataract surgery was performed via phacoemulsification using intravenous sedation and topical anesthesia supplemented with intracameral non-preserved lidocaine (Xylestesin 1%). Due to her unexpected complaints of no light perception, an urgent retinal consultation was obtained and the patient was examined approximately 45 minutes following the procedure. Her visual acuity was confirmed to be no light perception to the highest setting on the indirect ophthalmoscope. She denied pain or any type of discomfort in the eye. Digital ocular tension was normal. Examination of the anterior and posterior segment of the eye did not show any abnormalities. Specifically, there was no disc edema or pallor and the retina appeared normal. The retinal blood vessels showed normal caliber and course and no embolus was seen [Figure 2](#). Approximately 90 minutes after the surgery, patient started to recover perception of light. During the following hours, she progressively recovered her full visual field, slowly starting from the temporal side towards the central and nasal areas. The following day, the vision measured 20/25 in the operated eye.

## DISCUSSION

Current anesthesia for phacoemulsification surgery is often obtained with topical lidocaine occasionally supplemented with intracameral unpreserved lidocaine injected into the anterior chamber to decrease pain during surgical manipulation. It is believed that the lidocaine injected in the anterior chamber does not reach the retinal tissue or the optic nerve in a high enough concentration in most eyes undergoing cataract surgery, due to the physiologic barrier effect of the lens capsule, zonules and vitreous. However, in this present case, the previous vitrectomy may have altered these structures, facilitating the diffusion of the drug posteriorly during the surgery. In 1997, Hoffman and Fine<sup>2</sup> reported a similar case of transient complete visual loss after the use of intracameral unpreserved lidocaine to repair a traumatic corneal graft dehiscence. They believed the mechanism of transitory visual loss was total anesthesia of the retinal nerve fiber layer at or near the optic nerve. In 1998, Gills et al<sup>3</sup> reported amaurosis in four patients following the use of intracameral lidocaine, and in each case, the posterior capsule was no intact. All four patients recovered completely within hours. In 2009, Falzon et al<sup>4</sup> reported a case of transient, complete loss of vision following phacoemulsification with an intracameral ophthalmic viscosurgical device (OVD) and lidocaine solution complicated by posterior capsule rupture, with improved to 20/80 after one day and 20/25 in one week. In 2014, Gupta and Kumar<sup>5</sup> reported a case of temporary complete vision loss after intracameral lignocaine in a post-vitrectomy eye. In 2015, Eshraghi et al<sup>6</sup> reported a case of transient complete visual loss after intracameral lidocaine following posterior polar cataract surgery with posterior polar cataract surgery with posterior capsular rupture. As it was observed in these reported cases and the present case, the resulted full recovery of vision suggests the relative lack of retinal toxicity of unpreserved lidocaine in small intracameral concentrations. This case illustrates the possible brief visual effects of intracameral lidocaine. Recognition of such cases allows physicians to reassure the patient visual function should return to normal after a few hours of observation.

## FIGURES

Figure 1 Pre operative red free and OCT (horizontal scan) of the right eye

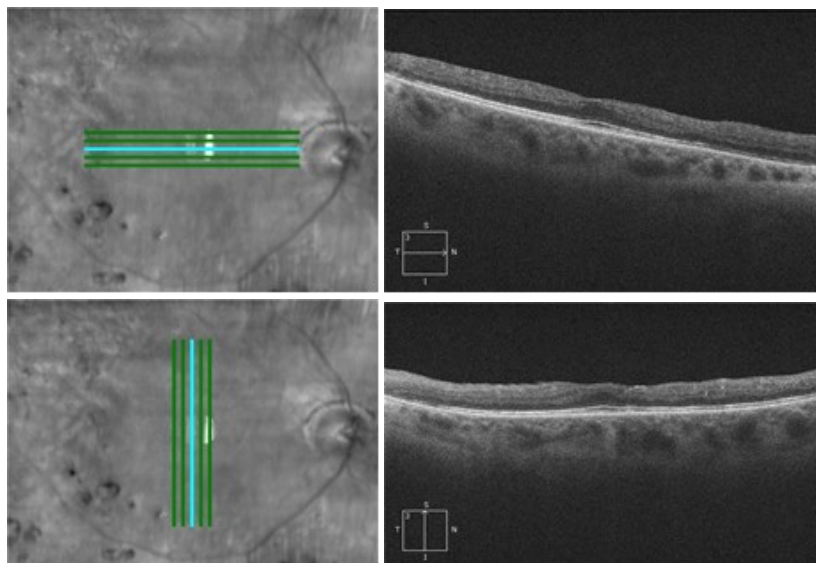


Figure 2 Post operative retinography of the right eye.



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